PROGRESSIVE COMPREHENSIVE HIGH SCHOOL (PCHS) MANKON, BAMENDA

MOCK GCE EXAMINATIONS

APRIL 2014 **ADVANCED LEVEL**

Subject/Code:	Computer Science 795
Paper N°	1
Examiner	DZEUGANG Placide

795 COMPUTER SCIENCE 1: MULTIPLE CHOICE QUESTIONS PAPER

TIME ALLOWED: 90 MINUTES

INSTRUCTIONS TO STUDENTS

Read the following instruction carefully before you start answering the questions on this paper. Make sure you have a soft HB pencil and an eraser for this examination

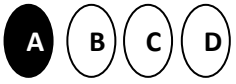
1. USE A SOFT HB PENCIL THROUGHOUT THIS EXAMINATION
2. This paper consists of FIFTY multiple choice questions to be completed by students.
3. Answers should be marked on the answer sheet provided.
4. Each item in this paper has four suggested answers lettered (A), (B), (C), (D). Read each item carefully then choose the best answer.
5. Mobile phones are **NOT ALLOWED** in the examination room.

Sample Item

Which of the following pairs represents general-purpose software tools?

(A) Spreadsheet and database software
(B) Word processor and accounting software
(C) Students record system and database software
(D) Insurance processing and spreadsheet software

Sample Answer



The best answer to this item is "spreadsheet and database software", so answer space (A) has been shaded.

DO NOT TURN THIS PAGE UNTIL YOU ARE ADVISED TO DO SO

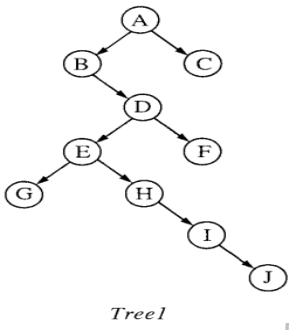
1. Which of the following principles of project management defines and controls the functions that are to be included in the system?

(A) Project quality management
(B) Project cost management
(C) Project time management
(D) Project scope management

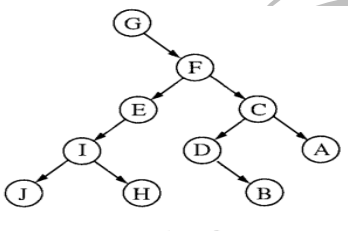
2. Prototype has which of the following characteristics?

(A) Includes work procedures, both extensive and throwaway
(B) Is operative and executable, is focused on a specific objective, is quickly built
(C) Has good look and feel, is executable, and is complete
(D) Is quickly built, has mock-up, and is complete

3. If Tree 1 and Tree 2 are the trees indicated below



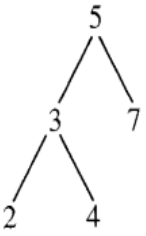
Tree1

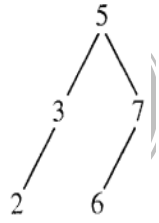


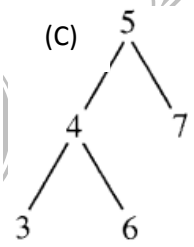
Tree2

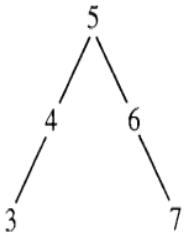
(A) Preorder, postorder.
(B) Postorder, inorder
(C) Postorder, postorder
(D) Inorder, inorder

4. Which of the following is NOT a binary search tree?

(A)


(B)


(C)


(D)


5. In the _____ phase the present system is studied in depth and new requirements are specified.
(A) development (B) implementation (C) design. (D) analysis

6. The initial configuration of the queue is a,b,c,d (a is the front end). To get the configuration d,c,b,a one needs a minimum of ?

(A) 2 deletions and 3 additions
(B) 3 additions and 2 deletions
(C) 3 deletions and 3 additions
(d) 3 deletions and 4 additions

7. What address is an example of a broadcast address for a class B network with a default subnet mask?

(A) 147.1.1.1 (B) 147.13.0.0 (C) 147.14.255.0 (D) 147.14.255.255

8. The following sequence of operation is performed on an emptystack : push(1), push(2), pop, push(1), push(2), pop, pop, pop, push(2), pop. The sequence of popped out values are?

(A) 2,2,1,1,2 (B) 2,2,1,2,2 (C) 2,1,2,2,1 (D) 2,1,2,2,2

9. An organization has a class N network and wishes to form subnets for 64 departments. The subnet mask would be:
(A) 255.255.0.0 (B) 255.255.64.0 (C) 255.255.128.0 (D) 255.255.252.0

10. A class of problem which is solvable in polynomial time by a determinist Turing Machine is said to be:
(A) Decidable (B) NP (C) NP-Hard (D) NP-Complete

11. A computer system has 6 tape drives, with 'n' processes competing for them. Each process may need 3 tape drives. The maximum value of 'n' for which the system is guaranteed to be deadlock free is
(A) 4 (B) 3 (C) 2 (D) 1

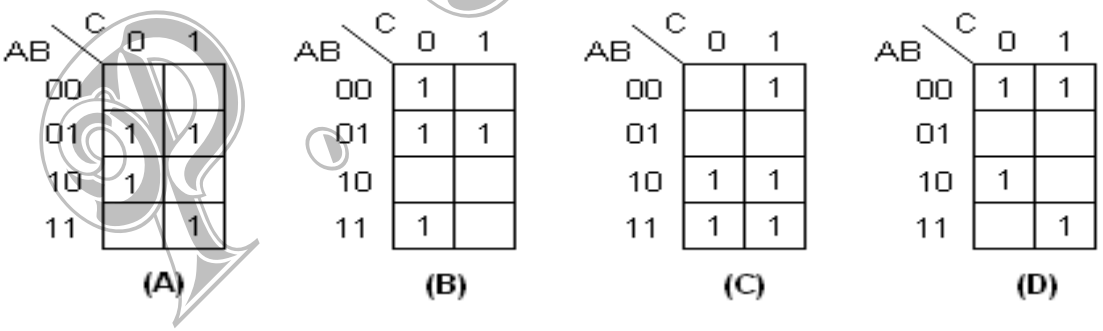
12. Projections and responses to queries are information output characteristics associated with a(n):
(A) DSS (B) MIS (C) TPS (D) ESS

13. Which of the following state transitions is not possible?
(A) blocked to running (C) blocked to ready
(B) ready to running (D) running to blocked

14. Given a floating-point number representation with 1 sign bit, 5-bit normalized mantissa, followed by 4-bit 2's complement exponent, which of the following is **closest to zero**?
(A) 0 10000 1000 **(B)** 1 11111 1111 **(C)** 0 10000 0000 **(D)** 1 11111 1000

15. Codes consisting of lines of varying widths or lengths that are computer-readable are known as
(A) An ASCII code (C) an OCR scanner
(B) a magnetic tape (D) a bar code

16. Mapping the SOP expression $\bar{A}B\bar{C} + \bar{A}B\bar{C} + \bar{A}BC + AB\bar{C}$, we get _____



17. Let's X and Y be 4 bit register with initial contents as 1011 and 1001, respectively. The following sequence of operations are performed on the two registers:
$Y \leftarrow X \otimes Y$ $Y \leftarrow X \otimes Y$ $X \leftarrow X \otimes Y$
where $\otimes$ denote XOR operation. The final content of the register are:
(A) X = 1001, Y = 1011 (C) X = 1011, Y = 1011
(B) X = 1011, Y = 1001 (D) X = 1001, Y = 1001

18. The process of transferring files from a computer on the Internet to your computer is called
(A) Downloading (B) Uploading (C) FTP (D) downsizing

19. ..... is the process of dividing the disk into tracks and sectors.
(A) Formatting (B)Tracking (C)Crashing (D)partitionning

20. The technology that stores only the essential instructions on a microprocessor chip and thus enhances its speed is referred to as
(A) CISC (B) RISC (C) SIMD (D) MIMD

21. An item that is directly as input can be either pushed to a stack and later popped and printed, or printed directly. Which of the following will be output if the input is the sequence of items 1, 2, 3, 4, 5?
(A) 3, 4, 5, 1, 2 (B) 3, 4, 5, 2, 1 (C) 1, 5, 2, 3, 4 (D) 5, 4, 3, 1, 2

22. Consider the set of relations given and the SQL query that follows:
Students: (Roll_number, name, date_of_birth)
Courses: (course_number, course_name)
Grades: (Roll_number, course_name, grade)
SELECT DISTINCT name
FROM Students, Courses, Grades
WHERE Students.Roll_name = Grades.Roll_name
AND Courses.instructor = Korth
AND Couses.course_number = Grades.course_number
AND Grades.grade = A
Which of the following set is computed by the above query?
(A) Names of students who have got an A grade in all courses taught by Korth
(B) Names of students who have got an A grade in all courses
(C) Names of students who have got an A grade in at least one of the courses taught by Korth
(D) Names of students taught by Korth

23. An essential difference between the operating system that runs a typical desktop computer and the operating system that runs a typical PDA is that
(A) the desktop OS has a graphical user interface whereas the PDA OS does not
(B) the desktop OS can run several programs simultaneously whereas the PDA OS cannot
(C) the desktop OS manages hardware resources whereas the PDA OS does not
(D) the desktop computer has an OS whereas a PDA does not

24. Match the following

1)	Data link layer	(i)	The lowest layer whose function is to activate, deactivate and maintain the circuit between DTE and DCE
2)	Physical layer	(ii)	Perform routing and communication
3)	Presentation layer	(iii)	Detection and recovery from errors in the transmitted data
4)	Network layer	(iv)	Provides for the syntax of the data

(A) 1)-(iii), 2)-(i), 3)-(iv), 4)-(ii) (C) 1)-(iv), 2)-(i), 3)-(ii), 4)-(iii)
(B) 1)-(ii), 2)-(i), 3)-(iv), 4)-(iii) (D) 1)-(ii), 2)-(i), 3)-(iii), 4)-(iv)

25. A 32-bit address bus allows access to a memory of capacity
(A) 64 Mb (B) 16 Mb (C) 1Gb (D) 4 Gb

26. Which form of software development model is most suited to a system where all the requirements are known at the start of a project and remain stable throughout the project?

(A) Waterfall model (C) Evolutionary mode

(B) Incremental model (D) Spiral model

27. What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interferences:

(A) unshielded twisted pair C) optical fibre

(B) Coaxial cable (D) microwave

28. The operating system performs time -sharing of the CPU. This implies that the operating system:

(A) allocates the CPU in turns to programs

(B) allows only one user to work at a time

(C) displays a clock so that users can check the time

(D) shares a clock with other operating systems

29. The 2's complement of the number 1101101 is

(A) 0101110 (B) 0111110 (C) 0110010 (D) 0010011

30. Which of the following is not a benefit of modular programming?

(A) It increases program readability

(B) It increases programmer productivity

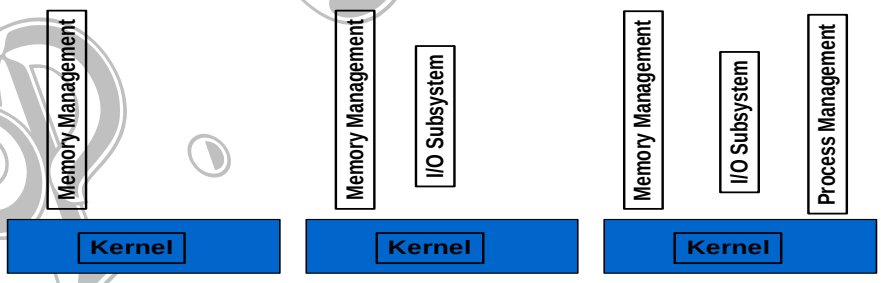
(C) It allows for the creation of a library of common programming task

(D) It allows one programmer to do the job of many in the same amount of time

31. An algorithm is made up of two modules M1 and M2. If order of M1 is f(n) and M2 is g(n), then the order of the algorithm is:

(A) *max(f(n), g(n))* **(B)** *min(f(n), g(n))* **(C)** *f(n) + g(n)* **(D)** *f(n) x g(n)*

32. What type of software development model is shown in the following diagram:



(A) Waterfall model (C) Evolutionary mode

(B) Incremental model (D) Spiral model

33. .... is a form of external documentation and is required to ensure smooth execution of software .

(A) Logical Errors (B) User Manual (C) System Manual (D) Comments

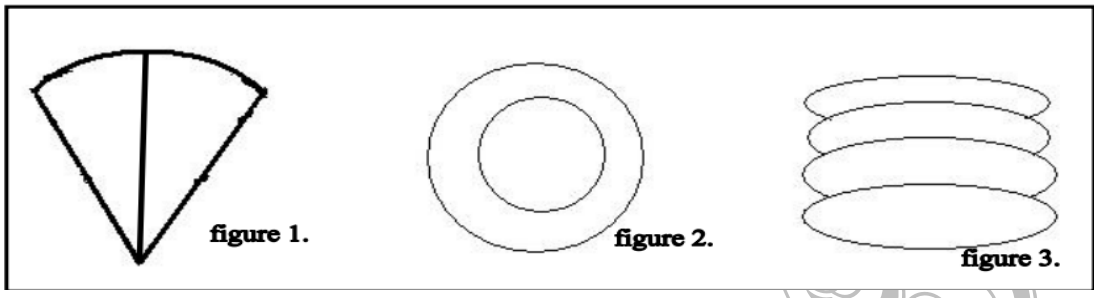
34. Data structure and code is access by a tester in .

(A) Black Box Testing (C) White Box Testing

(B) Acceptance Testing (D) Stress Testing

35. Three ways to improve the performance of a hard disk include
(A) Disk caching, RAID and file expansion
(B) File compression, disc caching and file encryption
(C) Disk caching, RAID and file compression
(D) RAID, file compression and disk expansion

36. According to the picture below, which of the following information is true?



(A) figure.1= Tracks; figure.2= Sectors; figure.3= Platters
(B) figure.1= Sectors; figure.2=Platters; figure.3= Tracks
(C) figure.1= Platters; figure.2=Tracks; figure.3= Sectors
(D) figure.1= Sectors; figure.2= Tracks; figure.3= Platters

37. If Round Robin is used with a time quantum of 1 second, the turnaround time for job 2 will be?

Job number	CPU time
1	1 hour
2	1 second
3	1 second

(A) 1 second (B) 2 seconds (C) 1 hour (D) 1 hour, 1 second

38. Given memory partitions of 100K, 500K, 200K, 300K and 600K (in order) and processes of 212K, 417K, 112K, and 426K (in order), using the first-fit algorithm in which partition would the process requiring 417K be placed?
(A) 500 (B) 200 (C) 300 (D) 600

39. The postfix expression for the infix expression A+B*(C+D)/F+D*E is:
(A) AB+CD+*F/D+E* (C) A*B+CD/F*DE++
(B) ABCD+*F/+DE*+ (D) A+*BCD/F*DE++

40. Consider the following recursive function.

```
function mystery(n)
begin
    if (n = 0)
        return 1;
    else
        return 3 * mystery(n - 1);
end
```

What value is returned as a result of the call mystery(5) ?
(A) 1 (B) 3 (C) 31 (D) 243

41. Which technique was introduced because a single job could not keep both the CPU and the I/O devices busy?

(A) Time-sharing
(B) SPOOLing
(C) Preemptive scheduling
(D) Multiprogramming

42. How does CSMA/CD react to collisions?

(A) All systems jam the network, and then all begin transmitting again.
(B) Hosts involved in a collision send an RTS signal indicating a time frame in which to retransmit.
(C) Hosts involved in the collision send a jam signal, and then run an algorithm before retransmitting.
(D) Collisions do not occur on CSMA/CD.

43. Telnet, FTP, SMTP, DNS, HTTP are examples of protocols that are used in

(A) application layer of OSI reference model
(B) presentation layer of OSI reference model
(C) session layer of OSI reference model
(D) data link layer of OSI reference model

44. Which answer correctly lists the OSI PDUs in order?

(A) Data, Packet, Frame, Segment, Bit
(B) Bit, Data, Packet, Segment, Frame
(C) Data, Segment, Packet, Frame, Bit
(D) Bit, Frame, Segment, Packet, Data

45. Consider the following algorithm segment. What is printed as a result of executing the code segment?

```
K ←0
while k < 20 do
   if (k mod 3 = 1) then
      print(k, " ");
   endif
   k ←k + 2
endwhile
```

(A) 4 16 (B) 0 6 12 18 (C) 4 10 16 (D) 1 4 7 10 13 16 19

46. The command to remove rows from a table 'CUSTOMER' is:

(A) REMOVE FROM CUSTOMER ...
(B) DELETE FROM CUSTOMER WHERE ...
(C) DROP FROM CUSTOMER ...
(D) UPDATE FROM CUSTOMER ...

47. The average time required to reach a storage location in memory and obtain its contents is called the

(A) seek time (B) turnaround time (C) access time (D) transfer time

48. A Turing machine is having a set of rules that perform such as the following action: "*If you are in state 2 and you read and 'A', change it to 'B' and move left*" and "*if you are in state 2 and you read and 'A', change it to 'C' and move right*". Such a Turing machine is said to be:
(A) ambiguous (B) non-ambiguous (C) determinist (D) non-determinist

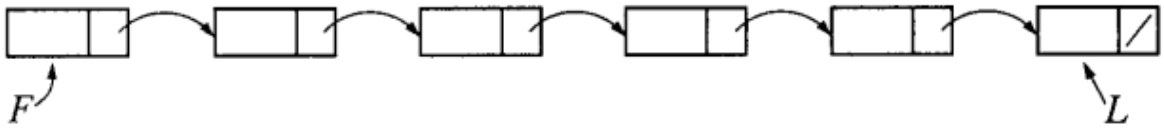
49. Let's consider the following program fragment.

Procedure P(integer: k, m) k←k-m; m←k+m; k←m-k; end;	Algorithm test Integer I, j; i←2; j←3; P(i,j); end.

If both parameter to P is passed by reference, what are the values of I and j at the end of the algorithm.

(A) i = 0, j = 2 (B) i = 1, j = 5 (C)) i = 2, j = 3 (D)) i = 3, j = 2

50. Consider the singly link list of the form



Where F is a pointer to the first element in the list and L is the pointer to the last element in the list. The time of which of the following operations depends on the length of the list?

(A) Delete the last element of the list
(B) Delete the first element of the list
(C) Add and element after the last element of the list
(D) Add and element after the first element of the list